

BULLETIN



Volume 12 Number 4

Division of Health

August, 2005

How Public Health Fingered the Cake-Batter Flavored Ice Cream and other stories...

Epidemiologists and laboratorians are often essential partners in outbreak detection and intervention. Nationwide and at the local level, outbreaks may first be discovered by an astute public health laboratorian, particularly when cases are sporadic. The following account of a recent outbreak demonstrates progress in integration between laboratory and epidemiology partners in public health departments.

In late June, 2005, the Minnesota Department of Health began investigating a cluster of four individuals who had *Salmonella* Typhimurium (var. Copenhagen) infections and determined that they had all consumed cake-batter flavored ice cream from a nationwide ice cream store chain with branches in Idaho. All four samples were processed in the laboratory by the pulsed-field gel electrophoresis (PFGE) technique, a procedure which fragments DNA from bacterial isolates, creating a molecular fingerprint (PFGE pattern) of each isolate. The Minnesota state public health laboratory posted images of the PFGE patterns from these *Salmonella* isolates to PulseNet, a password-protected internet-based message board specifically designed for public health laboratorians across the nation to compare PFGE patterns. Oregon, Washington, and Ohio quickly discovered they also had *Salmonella* cases that matched the posted PFGE patterns from Minnesota. Upon re-interview of the affected individuals, many of whom hadn't been asked specifically about this brand or neglected to report ice cream consumption, investigators learned that all had actually consumed the cake-batter flavored ice cream from the same chain. These laboratory

and epidemiologic findings were strongly suggestive of a multi-state outbreak. On July 1, 2005, the Food and Drug Administration and the ice cream chain announced that *Salmonella* infections in multiple states appeared linked to the consumption of cake-batter flavored ice cream and that the chain was taking immediate steps to remove the implicated product from stores nationwide. As of July 13th, no Idaho cases had been detected; however, 18 individuals from five states (Minnesota [5], Oregon [5], Washington [5], Ohio [2], and Michigan [1]) were apparently infected in the outbreak. If there had been a delay in the discovery of this outbreak, some infections would never have been linked to cake-batter flavored ice cream consumption, the product would have remained available for consumption longer, and certainly the number of cases would have been greater nationwide.

PulseNet has become an invaluable tool for outbreak detection by allowing public health laboratorians from across the country to compare their PFGE results with those from other states. The probability that two or more unrelated bacterial strains would have identical PFGE patterns is generally quite low; therefore, a laboratory match is highly suggestive of a cluster. With some strains of bacteria; however, genetic material may be highly conserved resulting in commonly detected PFGE patterns. Therefore, a laboratory match should be

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corroborated with epidemiologic evidence supporting the outbreak linkage between cases before conclusions are drawn. Laboratory detection of clusters of cases strengthens the evidence that an outbreak may have occurred. This can prove particularly useful with sporadic cases that appear initially unrelated. Currently, the Idaho Bureau of Laboratories (IBL) uses PFGE on all submissions of *Escherichia coli* O157:H7, *Shigella* sp., *Salmonella enterica* str., Methicillin Resistant *Staphylococcus aureus* (MRSA), and Vancomycin Resistant *Enterococci* sp. (VRE) based on nationally approved protocols. In addition, protocols are under development for Idaho isolates of *Campylobacter* sp., and *Listeria monocytogenes*. Currently these samples would be forwarded to the regional PulseNet laboratory in Seattle.

Healthcare providers are encouraged to ensure that isolates listed above are submitted to the IBL for analysis and posting to PulseNet.

To learn more about PulseNet, visit <http://www.cdc.gov/ncidod/eid/vol7no3/swaminathan.htm>.

Antibiotic Prophylaxis Following a USPS Biohazard Detection System Alarm

On July 30, 2005, as part of a nationwide United States Postal Service (USPS) program, the Biohazard Detection System (BDS) was installed in a USPS processing facility in Boise. A second BDS will be installed in a Pocatello facility this fall. The BDS is an automated system that uses polymerase chain reaction (PCR) technology to detect the presence of anthrax spores in air sampled over high-speed processing equipment. If the BDS alarm goes off, indicating a presumptive positive test, the USPS facility will be evacuated and potentially exposed workers and visitors will be decontaminated and given antibiotic prophylaxis. The presumptive positive BDS sample will be taken to the Idaho Bureau of Laboratories for additional PCR testing and culture. If the culture is negative for anthrax, antibiotic prophylaxis will be discontinued; if positive, antibiotic prophylaxis will be extended to 60 days and three doses of anthrax vaccine will be offered to potentially exposed workers and visitors.

Current recommendations for antibiotic prophylaxis following exposure to aerosolized anthrax can be found on the Centers for Disease Control (CDC) website <http://www.bt.cdc.gov/agent/anthrax/exposure/>. Ciprofloxacin and doxycycline are FDA-approved for post-exposure prophylaxis (PEP) in adults and children, and levofloxacin is FDA-approved for PEP in adults ages 18 and olderⁱ. Amoxicillin is an option for PEP for children and pregnant women when the *B. anthracis* isolate is susceptible to penicillinⁱⁱ. Ciprofloxacin or doxycycline will be provided to potentially exposed USPS workers and visitors, but those who have contraindications to ciprofloxacin or doxycycline that could result in serious or life-threatening adverse events may need to obtain prescriptions from private providers for alternative antibiotics. Although any *Bacillus anthracis* isolate from a BDS will be sent to the CDC for antibiotic sensitivity testing, the results will not be available until after prophylaxis should be initiated. Clinicians will be notified through the Health Alert Network if a BDS alarm has gone off at a USPS facility.

- i. CDC. Anthrax Q & A: Preventive Therapy. <http://www.bt.cdc.gov/agent/anthrax/faq/preventive.asp>. Accessed 7/5/2005
- ii. CDC. Notice to readers: Update: Interim Recommendations for Antimicrobial Prophylaxis for Children and Breastfeeding Mothers and Treatment of Children with Anthrax. MMWR November 16, 2001/50(45):1014-6 <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5045a5.htm>. Accessed 7/5/2005.

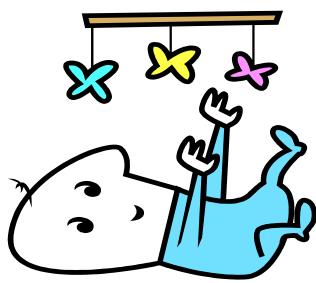
Idaho Guide for Health Data Suggestive of Terrorism

In response to the perceived threat of terrorism, healthcare providers, clinical laboratory personnel, and infection control professionals may wish to improve their ability to detect, recognize, and respond to illnesses caused by release of biologic, chemical, or radiologic agents. This can be accomplished by monitoring illness patterns and diagnostic clues that might indicate an unusual disease outbreak associated with release of such agents.

The *Idaho Guide for Health Data Suggestive of Terrorism* is a technical guide for healthcare providers, clinical laboratory personnel, and infection control professionals. It is intended to help providers detect and report any clusters or findings to their district or state health

department. The guide enhances the Idaho Reportable Disease List by providing guidance on extraordinary occurrence of illness, including clusters, in the context of potential acts of terrorism.

To obtain a copy of the *Idaho Guide for Health Data Suggestive of Terrorism* please contact an epidemiologist at your District Health Department.



Infant Botulism Treatment Available

All forms of botulism (foodborne, wound, or infant/intestinal) are reportable in Idaho, immediately upon suspicion or diagnosis,

day or night. Five cases of infant botulism have been reported in Idaho between 1995 and 2004.

Infant (intestinal) botulism, which typically occurs in individuals ≤ 1 year of age, arises from *Clostridium botulinum* colonization of the intestines leading to neurotoxin production in the body. This is in contrast to foodborne botulism which involves the ingestion of preformed toxin. Infant botulism cases may benefit from the early use of human-derived botulinum immune globulin (BIG) from the California Department of Health Services Infant Botulism Treatment and Prevention Program. This product differs from the botulinum antitoxin given to cases of foodborne and wound botulism, which is equine-derived.

Testing

Health care providers who suspect a patient has botulism should contact the Office of Epidemiology and Food Protection (or, after hours, State Communication at 1-800-632-8000) to discuss the case and arrange testing if needed. The Idaho Bureau of Laboratories (IBL) collaborates with the Washington State Public Health Laboratory in Seattle, WA, to carry out botulism testing. A toxin neutralization bioassay requiring mice is used to identify the toxin in serum or stool. With infant botulism, identification of the toxin or isolation of *C. botulinum* from stool is diagnostic. Laboratory confirmation takes several days, and treatment

should not be withheld pending laboratory results if botulism is strongly suspected. Samples are always shipped from IBL to WA for testing, not directly from the provider.

Antitoxin

Healthcare providers may contact California's Botulism Treatment and Prevention Program directly to discuss the use of BIG for a case of infant botulism. The program can be reached at (510) 231-7600. More information on the product and resources available through the California program are described on the following website: <http://www.dhs.ca.gov/ps/dcdc/html/ibtindex.htm>

Resources

Information on all forms of botulism, including the "Botulism Handbook for Clinicians, Epidemiologists, and Laboratory Workers" may be found at the following website: <http://www.bt.cdc.gov/agent/botulism/index.asp>.

University of Washington School of Medicine Offering STD Short Courses for Clinicians and Non Clinicians in Boise

Sign up Now!

REGISTRATION DEADLINE August 15th, 2005

1. STD Update Course for Clinicians

A 2-day course (August 31 and Sept 1) in Boise. This STD update course provides participants with training in the most recent advancements in the epidemiology, diagnosis, and management of viral and bacterial STDs.

2. STD Overview for Non-Clinicians

This 1-day course will be held August 30 in Boise, ID. Learn about the clinical aspects of STDs, including epidemiology, reproductive anatomy, causes of STDs, symptoms, transmission, and prevention. Link behavioral and immunological factors of HIV and other STDs. Explore key elements of effective risk reduction counseling. This course is designed for people working on STD/HIV prevention and education who are not medical providers.

Learn more about each course and register at <http://www.healthandwelfare.idaho.gov> under the STD/AIDS Program or call 208-334-6527.

Handy URLs to Access Idaho Department of Health and Welfare Websites

Looking for specific information available on the web from the Idaho Department of Health and Welfare? Perhaps one of the following links will help!

<http://www.diseaseinfo.idaho.gov>

<http://www.epi.idaho.gov>

<http://www.foodsafety.idaho.gov>

<http://www.healthandwelfare.idaho.gov>

<http://www.westnile.idaho.gov>

Idaho Disease Bulletin Office of Epidemiology & Food Protection

P. O. Box 83720
450 W. State St., 4th Floor
Boise, ID 83720-0036
<http://www.epi.idaho.gov>

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**ROUTINE PHYSICIAN 24-HOUR DISEASE REPORTING LINE: 1-800-632-5927
EMERGENCY PHYSICIAN 24-HOUR REPORTING LINE: 1-800-632-8000**

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